

### REMARKS

Favorable reconsideration and allowance of the claims of the present application are respectfully requested.

Before addressing the specific grounds of rejection raised in the present Office Action, applicants have amended Claim 16 by positively reciting that the claimed technical mixture of hydroxy fatty acid esters are prepared *by reacting, in the presence of an enzyme, alcohols having the formula  $HO-(CH_2-CH_2-O)_xH$ , and a fatty acid component selected from hydroxy fatty acids, hydroxy fatty acid alkyl esters and combinations thereof*. Support for this amendment to Claim 16 is found at Page 8, lines 8-28 of the specification of the present application as well as Claim 1. Applicants observe that at Page 8, lines 27-28 the compounds ethylene glycol, diethylene glycol and triethylene glycol are mentioned as preferred alcohols. These preferred alcohols have the formula  $HO-(CH_2-CH_2-O)_xH$  wherein  $x$  is 1-3.

Since the above amendment to Claim 16 does not introduce new matter into the application, entry thereof is respectfully requested.

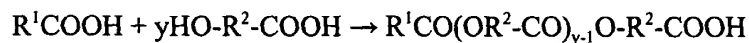
In the present Office Action, Claim 16 stands rejected under 35 U.S.C. §102(b) as allegedly anticipated by or, in the alternative, under 35 U.S.C. §103 as allegedly unpatentable over U.S. Patent No. 5,863,461 to Ansmann, et al. ("Ansmann, et al."); U.S. Patent No. 5,288,619 to Brown, et al. ("Brown, et al."); U.S. Patent No. 6,320,065 to Gruning, et al. ("Gruning, et al."); or U.S. Patent No. 6,344,509 to Mitzutani ("Mitzutani").

In respect to the §102(b) rejections, it is axiomatic that anticipation under §102 requires that the prior art reference disclose each and every element of the claim to which it is applied. In re King, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir.

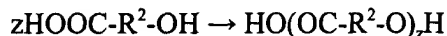
1986). Thus, there must be no differences between the subject matter of the claim and the disclosure of the applied prior art reference. Stated another way, the reference must contain within its four corners adequate direction to practice the invention as claimed. The corollary of the rule is equally applicable: The absence from the applied reference of any claimed element negates anticipation. Kloster Speedsteel AB v. Crucible Inc., 793 F.2d 1565, 1571, 230 USPQ 81, 84 (Fed Cir. 1986).

Applicants respectfully submit that Claim 16 of the present application is not anticipated by the disclosures of Ansmann, et al.; Brown, et al.; Gruning, et al. or Mitzutani since none of the applied references discloses a technical mixture of hydroxy fatty acid esters which are solid at room temperature and have improved melting behavior, that are prepared *by reacting, in the presence of an enzyme, alcohols having the formula  $HO-(CH_2-CH_2-O)_xH$ , wherein  $x$  is 1-3 and a fatty acid component selected from hydroxy fatty acids, hydroxy fatty acid alkyl esters and combinations thereof.* This reaction provides hydroxy fatty acid esters of the basic formula  $R^1-COO(C_2H_4-O)_xOC-R^1-OH$  wherein  $R^1$  is a component of the fatty acid.

Ansmann, et al. provide a process for the production of water-in-oil emulsions using block copolyesters of hydroxyfatty acids and polyether glycols as emulsifiers and stabilizers. The production of the block copolyesters is known per se from the literature and may be carried out, for example, by (a) initially preparing the lipophilic part of the molecular by polycondensation of a hydroxyfatty acid. Either  $y$  or  $z$  moles of hydroxy fatty acid may be condensed onto a non-hydroxylated carboxylic acid with the formula  $R^1COOH$  as a starter molecule:



(b) Alternatively, the hydroxyfatty HO-R<sup>2</sup>-COOH may simply be subjected to polycondensation, in which case the hydroxyfatty acid itself serves as the starting molecule:



Accordingly, the reaction products employed in Ansmann, et al. are (a) block copolyesters or (b) block homopolyesters in which the groups (OR<sup>2</sup>CO)<sub>y</sub> and (COR<sup>2</sup>O)<sub>z</sub> are residues of ricinoleic acid or hydrogenated castor oil fatty acid with a degree of condensation of y or z of greater than 1 to 75, preferably 5 to 30.

In accordance with Col. 2, lines 29-34 of Ansmann, et al. these products are then reacted with a polyethylene glycol of the formula HO(C<sub>2</sub>H<sub>4</sub>-O)<sub>x</sub>H where x is from 5 to 150.

As such, Ansmann, et al. employ a polyethylene glycol that is presently outside the scope of the alcohol provided in amended Claim 16. This difference, in turn, implies that the prior art produces a product that is different from the claimed invention.

Brown, et al. provide an enzymatic transesterification method for preparing a marginal oil by (a) carrying out a transesterification reaction of a triglyceride with stearic acid or stearic acid monoester in a reaction zone, and (b) withdrawing a transesterified triglyceride and hydrogenating the transesterified stearic acid or stearic acid monoester to provide a hydrogenated recycle stearic acid material and introducing the hydrogenated recycle stearic acid source material into the reaction zone. Example 1 (compare Table 1 and 2) shows the content of stearic acid is increased dramatically.

Applicants respectfully submit that the marginal oil produced in Brown, et al. is not a solid product and that the stearic acid or stearic acid monoester required in step (a) of Brown, et al. is not a hydroxy fatty acid. As such, applicants' claimed

technical mixture of hydroxy fatty acid esters which are **solid at room temperature** and have improved melting behavior, that are prepared *by reacting*, in the presence of an enzyme, alcohols having the formula  $\text{HO}-(\text{CH}_2-\text{CH}_2-\text{O})_x\text{H}$ , wherein  $x$  is 1-3 and **a fatty acid component selected from hydroxy fatty acids, hydroxy fatty acid alkyl esters and combinations thereof** is not anticipated by Brown, et al.

Gruning, et al. relate to a process for the preparation of fatty acid partial esters of polyols having at least 4 carbon atoms, at least one primary and at least one secondary alcohol group, where in a first processing step, the polyols are reacted with a fatty acid or a fatty acid derivative to give a fatty acid partial ester (II) and, in a second processing step, the fatty acids partial esters ((II) are subjected to a selective enzymatic cleavage of primary ester groups.

The product obtained in Gruning, et al., for example, is a polyglycerol ester having a high content of monoesters (more than 50 %) which are mainly secondary esters. See, Col. 3, lines 18-21.

The fatty acids and the fatty acid derivatives employed in Gruning, et al. are derived from straight-chain or branched, saturated, mono- or polyunsaturated fatty acid radicals having 6 to 24 carbon atoms. Stearic acid and palmitic acids are disclosed as being particularly preferred. See Co. 3, line 66 to Col. 4, line 8.

Applicants respectfully submit that in Gruning, et al. no hydroxy fatty acids are disclosed. Thus Claim 16 is not anticipated by Gruning, et al. In the claimed invention, selective enzymatic esterification of primary hydroxy groups with hydroxy fatty acids occurs. Such a reaction is not disclosed in Gruning, et al.

Mizutani provides a thermoplastic resin composition wherein as component (C) a polyhydroxy alcohol ester of condensed hydroxyfatty acids and/or (C') a condensed

hydroxyfatty acids having a degree of condensation exceeding 3 is used. The polyhydroxy alcohols, which are constituent of (C) include one or more polyglycerols selected from the group consisting of diglycerol, triglycerol, tetraglycerol, pentaglycerol, hexaglycerol and decaglycerol. See Col.2, lines 51 to 53.

Applicants observe that the esters disclosed in Mizutani are comparable to the esters disclosed in Ansmann, et al.; i.e., (C') is identical to component (b) of Ansmann, et al. ( $z\text{HOOC-R}^2\text{-OH} \rightarrow \text{HO}(\text{OC-R}^2\text{-O})_z\text{H}$  with  $z$  exceeding 3. If (C') is further reacted with a polyglycerol the resulting ester is component C: HO-polyglycerol moiety- $\text{O}(\text{OC-R}^2\text{-O})_z\text{H}$ . This prior art product is different from the esters of the claimed invention which would have the formula  $\text{R}^1\text{-COO}(\text{C}_2\text{H}_4\text{-O})_x\text{OC-R}^1\text{-OH}$  wherein  $\text{R}^1$  is a component of the fatty acid.

The foregoing remarks clearly establish that the disclosures of Ansmann, et al.; Brown, et al.; Gruning, et al.; and Mizutani do not teach every aspect of Claim 16, as required by King and Kolster Speedsteel; therefore Claim 16 of the present application, as amended herein, is not anticipated by the disclosures of Ansmann, et al.; Brown, et al.; Gruning, et al.; and Mizutani. Applicants thus submit that the instant §102(b) rejections have been obviated and withdrawal thereof is respectfully requested.

With respect to the §103 rejections, applicants submit that the above remarks made in regard to the anticipation rejections apply equal well here for the obviousness rejections. Applicants thus incorporate the above remarks herein by reference. To reiterate: the disclosures of Ansmann, et al.; Brown, et al.; Gruning, et al.; and Mizutani do not teach or suggest a technical mixture of hydroxy fatty acid esters which are solid at room temperature and have improved melting behavior, which are prepared by reacting, in the presence of an enzyme, alcohols having the formula HO-

$(CH_2-CH_2-O)_xH$ , wherein  $x$  is 1-3 and a fatty acid component selected from hydroxy fatty acids, hydroxy fatty acid alkyl esters and combinations thereof. This reaction provides hydroxy fatty acid esters of the basic formula  $R^1-COO(C_2H_4-O)_xOC-R^1-OH$  wherein  $R^1$  is a component of the fatty acid. The prior art references do not teach or suggest the claimed reaction therefore the products of the prior art are different from that presently covered for in Claim 16.

The §103 rejections also fail because there is no motivation in the applied references which suggests modifying the disclosed methods to provided a technical mixture of hydroxy fatty acid ester, which are solid at room temperature and have improved melting behavior, that are prepared by reacting, in the presence of an enzyme, alcohols having the formula  $HO-(CH_2-CH_2-O)_xH$ , wherein  $x$  is 1-3 and a fatty acid component selected from hydroxy fatty acids, hydroxy fatty acid alkyl esters and combinations thereof. The §103 rejections are thus improper since the prior art does not suggest this dramatic modification. The law requires that a prior art reference provide some teaching, suggestion or motivation to make the modification. In re Vaeck, 947 F.2d 488, 493, 20 USPQ 2d 1438, 1442 (Fed. Cir. 1991).

"The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. "In re Fritch, 972 F.2d 1260, 1266, 23 USPQ 2d 1780, 1783-84 (Fed. Cir. 1992).

There is no suggestion in the prior art of applicants' technical mixture that is produced using the processing steps recited in Claim 16. As such, Claim 16 of the instant application is not obvious from any of the above-mentioned prior art references.

Therefore, applicants respectfully submit that the rejections under 35 U.S.C. §103 have been obviated; and the withdrawal thereof is respectfully requested.

Thus in view of the foregoing amendments and remarks, it is firmly believed that the present case is in condition for allowance, which action is earnestly solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'LS Szivos', with a long horizontal flourish extending to the right.

Leslie S. Szivos  
Registration No. 39,394

Customer No. 23389

LSS/sf